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| 09/806,103 | 03/28/2001 | Takahiro Hayashi | 33388 | 5430 |

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| EXAMINER |
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FOX, BRYAN J

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| ART UNIT | PAPER NUMBER |
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2617

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 04/09/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/806,103

Applicant(s)

HAYASHI ET AL.

Examiner

Bryan J. Fox

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5-10,12,14,19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,5-10,12,14,19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama (US005493604A) in view of Azartash, et al. (WO9921343A1) and further in view of Takahashi (JP411027352A) and Takagi (US005260998A).

Regarding **claim 19**, Hirayama discloses a foldable mobile telephone with a receiving section 1, which reads on the claimed "upper case" and a calling section 2 which reads on the claimed "lower case hinged to the upper case by a hinge portion" (see column 2, lines 18-20 and figure 1). The antenna 11 (see figure 1A) that connects the phone wirelessly to a base station reads on the claimed "I/O connector". The receiving section 1 also includes an antenna 11 (see column 2, lines 21-22 and figure 1), which reads on the claimed "RF communication section". These components are mounted on a hard upper casing 1. The calling section 2 includes function buttons 22 (see column 2, lines 26-28 and figure 1), which read on the claimed "key operation section", a battery 26 (see column 2, lines 30-31 and figure 1), which read on the

claimed "battery" and ten keys 21 (see column 2, lines 52-54 and figure 1). Hirayama does not disclose a vibration section located in the upper casing.

In a similar field of endeavor, Azartash, et al. discloses a Portable Telephone with a vibrator in the upper casing of the phone as described on page 3, lines 21-22, which reads on the claimed "vibrator section" located on the upper part of the telephone.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to add the above vibrator to Hirayama in order to silently alert users of a phone call. The combination of Azartash et al. and Hirayama fails to expressly disclose including a control processing section in the upper portion of the telephone.

In a similar field of endeavor, Takahashi discloses a foldable mobile telephone with a processing circuit board 19 in the upper portion of the phone (see figure 1), which reads on the claimed "said upper case including a control processing section."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama and Azartash et al. with Takahashi to include the above processing circuit board in the upper portion of the telephone in order to perform normal processing functions such as suppressing power consumption as suggested by Takahashi (see abstract). The combination of Hirayama, Azartash et al and Takahashi fails to disclose the use of a flexible board.

In a similar field of endeavor, Takagi discloses a foldable portable telephone with a flexible printed wiring board 26 provided with a switch 36, at least part of which is in the lower section of the folding phone (see column 4, lines 33-48 and figure 4).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include the above flexible keyboard in order to aid in manufacturability and increase portability. The resultant phone is foldable (see Hirayama figures 1a and 1b), which reads on the claimed, "a battery terminal, a microphone, a key diaphragm, and a LED for keys are all mounted on portions of one surface of the flexible board and said portions are folded or turned down before storing in the lower case."

Regarding **claim 3**, the combination of Hirayama, Azartash et al and Takahashi fails to disclose a portion of the flexible board extends through the hinge portion and is used as a connecting board for electrically connecting the upper case and the lower case.

In a similar field of endeavor, Takagi discloses a flexible wiring board extending through the folding portion of the phone (see column 4, lines 33-48 and figure 4), which reads on the claimed, "a portion of the flexible board extends through the hinge portion and is used as a connecting board for electrically connecting the upper case and the lower case."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Azartash et al and Takahashi with Takagi to include the above flexible board extending through the hinge in order to allow the telephone to be compactly folded as suggested by Takagi (see column 7, lines 37-43).

Regarding **claim 6**, the above combination of Hirayama, Azartash et al, Takahashi and Takagi fails to disclose a viewport.

In a similar field of endeavor, Azartash, et al. discloses a foldable telephone where the display is seen through the viewing window 44 in the folded state on the lower case 36 (see figure 5), which reads on the claimed "view port."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the above combination of Hirayama, Azartash, Takahashi and Takagi to include the above viewing window as taught by Azartash, et al., in order to allow the use of the display for such functions as caller ID while in the folded state.

Regarding **claim 7**, as applied to claim 6 above, the combination of Hirayama, Azartash et al, Takahashi and Takagi discloses a viewing window 44 disclosed by (see Azartash figure 5), which reads on the claimed "view port" is positioned between the microphone 40 and the keypad 32 which reads on the claimed "key operation section."

Regarding **claim 8**, as applied to claim 7 above, the combination of Hirayama, Azartash et al, Takahashi and Takagi further discloses a transparent or clear window 44 or 12 (see Azartash et al. page 1, lines 32-34).

Regarding **claim 9**, the combination of Hirayama, Azartash et al, Takahashi and Takagi fails to disclose the use of a lens function in the transparent window.

In a similar field of endeavor, Azartash et al disclose a transparent window 12 with a magnifying lens (see Azartash et al. page 1, line 38 and page 2, lines 1-2), which reads on the claimed "lens function".

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Azartash et al, Takahashi and

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Takagi with Azartash et al to include the above magnifying lens in order to allow a user to better see the display.

Regarding **claim 10**, the combination of Hirayama, Azartash et al and Takahashi fails to disclose a portion of the upper case and the lower case in the vicinity of the hinge portion is narrower than a remaining portion.

In a similar field of endeavor, Takagi discloses the board 26 is narrower near the hinge portion (see figures 4 and 6), which reads on the claimed, "a portion of the upper case and the lower case in the vicinity of the hinge portion is narrower than a remaining portion."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Azartash et al and Takahashi with Takagi to include the above narrower portion near the hinge in order to allow room for the hinge.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hirayama, Azartash et al, Takahashi and Takagi as applied to claim 1 above, and further in view of Morgenthaler (US006310609B1).

Regarding **claim 2**, as applied to claim 1 above, the above combination of Hirayama, Azartash et al, Takahashi and Takagi discloses a display 13 that is a liquid crystal display (see Hirayama column 2, line 23), which reads on the claimed "liquid crystal display", located in the receiving section 1 which reads on the claimed "upper case". The combination of Hirayama, Azartash et al. and Takahashi also discloses

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buttons below the display (see Azartash et al. figure2), however it is not expressly disclosed that the buttons are used for navigating a menu.

In a similar field of endeavor, Morgenthaler discloses a mobile phone with three keys 136, 138 and 140 to allow the user to move through the complicated menu scheme by pressing soft key 140 to select the menu, then moving the cursor 130 within that menu using the indexing key 136 and selecting a particular menu entry by pressing the other soft key 138 (see column 1, line 66 – column 2, line 5 and figure 1).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Azartash et al, Takahashi and Takagi with Morgenthaler to include the above menu navigation in order to make the device more user friendly.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Azartash, et al, Takahashi and Takagi as applied to claim 1 above, and further in view of Richards et al (US00D408030S).

Regarding **claim 5**, the combination of Hirayama, Azartash, et al, Takahashi and Takagi fails to disclose an inclined microphone so that the microphone is directed toward outside when the upper case and the lower case are in a closed state.

In a similar field of endeavor, Richards et al disclose a housing for a portable communication device where the microphone is inclined and directed towards outside when closed (see e.g. figure 2).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to one skilled in the art to modify the combination of Hirayama, Azartash, et al, Takahashi and Takagi as applied to claim 1 to include the above inclined microphone disclosed in Richards et al, in order to bring the microphone closer to the mouth when in use and improve the sound input into the microphone.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Weissshappel, et al. and further in view of Tamura, Takahashi and Takagi (US005260998A).

Regarding **claim 20**, Hirayama discloses a portable telephone that folds which reads on the claimed "foldable mobile communication terminal". Hirayama also discloses a receiving section 1, which reads on the claimed "upper case" and a calling section 2 which reads on the claimed "lower section". The receiving section 1 includes volume adjust buttons 14 and a display 13 which reads on the claimed "display"; the combination of volume adjust buttons, an input to the phone and the display, an output from the phone reads on the claimed "I/O section". Hirayama also discloses an antenna 11, which reads on the claimed "RF communication section". These components are mounted on a hard upper casing 1. The calling section 2 includes function buttons 22 which read on the claimed "operation section", a battery 26 which read on the claimed "battery" and ten keys 21 which read on the claimed "keyboard". The components in the calling section are mounted on the keyboard. Hirayama fails to disclose the location of a vibration section or I/O connector.

In a similar field of endeavor, Weissshappel, et al. discloses a portable electronic device with an external connector 304 which, as described in column 5, lines 21-23, may be used to couple the portable radiotelephone to a hands free user interface, thus requiring input and output and reading on the claimed "I/O connector". Furthermore the external connector is located on the lower portion of the foldable phone.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Hirayama with Weissshappel et al to add an external connector to the phone in order to allow use of a hands free user interface. The combination of Hirayama and Weissshappel, et al. fails to disclose a vibration section located in the lower casing.

In a similar field of endeavor, Tamura discloses a portable telephone with a vibrator 7, which reads on the claimed "vibrator section" located on the lower part of the folding telephone (see abstract and figure a).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama and Weissshappel et al to include the above vibrator 7 as taught by Tamura in order to silently alert users of incoming calls. The combination of Hirayama, Weissshappel et al. and Tamura fails to teach the inclusion of a control processing section in the upper section.

In a similar field of endeavor, Takahashi discloses a foldable mobile telephone with a processing circuit board 19 in the upper portion of the phone (see figure 1), which reads on the claimed "upper case including a control processing section".

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Weissshappel et al. and Tamura with Takahashi to include the above processing circuit board in the upper portion of the telephone in order to perform normal processing functions such as suppressing power consumption as suggested by Takahashi (see abstract). The combination of Hirayama, Weissshappel et al and Takahashi fails to disclose that the key board is a flexible board.

In a similar field of endeavor, Takagi discloses a foldable portable telephone with a flexible printed wiring board 26 provided with a switch 36, at least part of which is in the lower section of the folding phone (see column 4, lines 33-48 and figure 4).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Weissshappel et al, Tamura and Takahashi to include the above flexible keyboard as taught by Takagi in order to aid in manufacturability and increase portability. The resultant phone is foldable (see Hirayama figures 1a and 1b), which reads on the claimed, "a battery terminal, a microphone, a key diaphragm, and a LED for keys are all mounted a same surface of the flexible board and folded or turned down before storing in the lower case."

Regarding **claim 12**, the combination of Hirayama, Weissshappel et al, Tamura and Takahashi fails to disclose a portion of the flexible board extends through the hinge portion and is used as a connecting board for electrically connecting the upper case and the lower case.

In a similar field of endeavor, Takagi discloses a flexible wiring board extending through the folding portion of the phone (see column 4, lines 33-48 and figure 4), which

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reads on the claimed, "a portion of the flexible board extends through the hinge portion and is used as a connecting board for electrically connecting the upper case and the lower case."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Azartash et al and Takahashi with Takagi to include the above flexible board extending through the hinge in order to allow the telephone to be compactly folded as suggested by Takagi (see column 7, lines 37-43).

Regarding **claim 10**, the combination of Hirayama, Azartash et al and Takahashi fails to disclose a portion of the upper case and the lower case in the vicinity of the hinge portion is narrower than a remaining portion.

In a similar field of endeavor, Takagi discloses the board 26 is narrower near the hinge portion (see figures 4 and 6), which reads on the claimed, "a portion of the upper case and the lower case in the vicinity of the hinge portion is narrower than a remaining portion."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Azartash et al and Takahashi with Takagi to include the above narrower portion near the hinge in order to allow room for the hinge.

Response to Arguments

Applicant's arguments with respect to claims 2-10, 12, 14, 19 and 20 have been considered but are moot in view of the new ground(s) of rejection. Specifically, a new

reference Takagi (US005260998A) has been used in place other references previously used, including Takagi et al (US005235636A).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Emmert (US006352434B1) discloses high density flexible circuit element and communication device using same.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan J. Fox whose telephone number is (571) 272-7908. The examiner can normally be reached on Monday through Friday 9am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles N. Appiah can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bryan Fox
April 1, 2007


CHARLES N. APPIAH
SUPERVISORY PATENT EXAMINER